UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/066,359	08/18/1998	RIKU PIRHONEN	PMS252337T29	8724

7590 12/24/2003	**EXAMINER**
PILLSBURY WINTHROP LLP	NGUYEN, TOAN D
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MCLEAN, VA 22102	

ART UNIT	PAPER NUMBER
2665	22

DATE MAILED: 12/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.		Applicant(s)
Office Action Summary	09/066,359		PIRHONEN ET AL.
	Examiner		**Art Unit**
	Toan D Nguyen		2665

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>28 August 2003</u> .

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1 and 3-18</u> is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1 and 3-18</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

     If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☒ All   b) ☐ Some * c) ☐ None of:

         1. ☒ Certified copies of the priority documents have been received.

         2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

     a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)	4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .	6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 U.S.C. § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which form the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth
> in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the

claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c)

and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

2.   Claims 1, 3 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Ramesh et al. (U.S. Patent 5,668,820) in view of Koetje Anno et al. (EP 0660558A2).

For claims 1 and 3, Ramesh et al. disclose digital communication system having a

punctured convolutional coding system and method comprises:

grouping bits to be transmitted in blocks having the minimum size of 288 bits (figure 3,

col. 6 lines 1-12),

carrying out convolutional coding for said blocks with a code rate of ½ by using GSM

convolutional coding polynomes so that after the coding, the block size is 584 bits (figure 3, col.

6 lines 1-12); and

puncturing the coded bits obtained by deleting 128 bits, from each block so that each

block contains no more than 456 bits (figure 3, col. 6 lines 1-30).

However, Ramesh et al. do not explicitly disclose GSM convolutional coding. In an

analogous art, Koetje Anno et al. disclose GSM convolutional coding (col. 7 lines 39-41). In

claim 3, Koetje Anno et al. further disclose inserting 4 tails bits to the blocks (figure 3, col. 6

lines 8-11). One skilled in the art would have recognized GSM convolutional coding to use

teaching of Koetje Anno et al. in the system of Ramesh et al. Therefore it would have been

obvious to one of ordinary skill in the art at the time invention, to use the GSM convolutional

coding as taught by Koetje Anno et al. in Ramesh et al.'s system with the motivation being to

provide the interleaving process (col. 7 lines 39-43).

For claim 9, Koetje Anno et al. disclose each information bit is inverted prior to the

transfer and deinverted after the transfer (figure 2, col. 4 line 54 and col. 5 lines 43-45).

For claim 10, Koetje Anno et al. disclose the information to be transmitted is transfer in

the transfer system by generating a transfer frame whose total length is 640 bits and the

information transferred by which is applied to a channel coder as two blocks with the length of

290 bits (figure 2, col. 4 line 46 to col. 5 line 24).

For claim 11, Koetje Anno et al. disclose an identifier is inserted to both of the blocks

that indicates whether the first or the second block of the frame is in question (see figure 10, col.

10 lines 30-44, and col. 14 lines 51-55).

3.   Claims 4, 7 and 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Ramesh et al. (U.S. Patent 5,668,820) in view of Koetje Anno et al. (EP 0660558A2) further in

view of Kuroda et al. (U.S. Patent 5,432,800).

For claim 4, Ramesh et al. in view of Koetje Anno et al. do not disclose the information

to be transmitted is transferred in the transfer system by generating one frame from two

transcoding frames by using a part of synchronization and control bit positions of the latter frame

in the information transfer. In an analogous art, Kuroda et al. disclose the information to be

transmitted is transferred in the transfer system by generating one frame from two transcoding

frames by using a part of synchronization and control bit positions of the latter frame in the

information transfer (col. 3 lines 5-30).

One skilled in the art would have recognized a frame signal containing the plural data

block signals and the parity block signals is generated, to use teaching of Kuroda et al. in the

system of Ramesh et al. Therefore it would have been obvious to the one of ordinary skill in the

art at the time of the invention, to use the frame signal containing the plural data block signals

and the parity block signals is generated as taught by Kuroda et al. in Ramesh et al. with the

motivation being to provide a frame signal to be sent out (col. 3 lines 9-12).

For claim 7, Kuroda et al. disclose the CRC value thus obtained is transferred by using

spare control bits, and that the CRC value is utilized in synchronizing the transcoding frame

(figure 2, col. 7 lines 6-12 and col. 8 lines 24-38).

For claim 12, Koetje Anno et al. in view of Ramesh et al. disclose the block identifier is

in predetermined position in the block (col. 14 lines 51-55). Kuroda et al. in view of Ramesh et

al. and Koetje Anno et al. disclose the identifier of the second block is formed by inverting the

identifier of the first block (col. 7 lines 56-60).

For claims 13-16, Kuroda et al disclose the first bits of both frames are used for

transferring supplementary information over the air interface (see figure 4, col. 9 line 65 to col.

10 line 17).

4.   Claims 5-6, 8, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Ramesh et al. (U.S. Patent 5,668,820) in view of Koetje Anno et al. (EP 0660558A2) further

view of Bach et al. (U.S. Patent 5,475,686).

For claims 5 and 6, Ramesh et al. disclose digital communication system having a

punctured convolutional coding system and method comprises:

grouping bits to be transmitted in blocks having a minimum size of 288 bits (figure 3, col.

6 lines 1-12);

carrying out convolutional coding for said blocks with a code rate of ½ by using GSM

convolutional coding polynomes (figure 3, col. 6 lines 1-12);

puncturing the coded bits obtained, the puncturing including deleting bits from each

block so that each block contains no more than 456 bits (figure 3, col. 6 lines 1-30).

However, Ramesh et al. do not explicitly disclose GSM convolutional coding. In an

analogous art, Koetje Anno et al. disclose GSM convolutional coding (col. 7 lines 39-41).

One skilled in the art would have recognized GSM convolutional coding to use teaching

of Koetje Anno et al. in the system of Ramesh et al. Therefore it would have been obvious to one

of ordinary skill in the art at the time invention, to use the GSM convolutional coding as taught

by Koetje Anno et al. in Ramesh et al.'s system with the motivation being to provide the

interleaving process (col. 7 lines 39-43).

Ramesh et al. in view of Koetje Anno et al. do not disclose the information to be

transmitted is transferred in the transfer system by generating a transcoding frame whose first

two octets form a synchronization pattern that consists of zeros. In an analogous art, Bach et al.

disclose the information to be transmitted is transferred in the transfer system by generating a

transcoding frame whose first two octets form a synchronization pattern that consists of zeros

(figure 4, col. 3 lines 36-40).

One skilled in the art would have recognized a transcoding frame to use teaching of Bach

et al. in the system of Ramesh et al. Therefore it would have been obvious to one of ordinary

skill in the art at the time invention, to use the transcoding frame whose first two octets form a

synchronization pattern that consists of zeros as taught by Bach et al. in Ramesh et al. with the

motivation being to provide a minimum number of bits necessary for frame synchronization (col.

3 lines 39-40).

For claim 8, Bach et al. disclose the information to be transferred in modified so that the

bit sequences comprised by the information differ from the synchronization sequences (col. 2

lines 41-47).

For claims 17 and 18, Bach et al. disclose the transfer frame is generated at a network

interworking unit (col. 2 lines 66-67) and the transfer frame comprises a radio link protocol

frame (col. 3 lines 16-27).

Citation of Relevant Prior Art

5.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

Ward et al. (U.S. Patent 5,815,809) discloses data channel in blocks of 288 bits as shown

in figure 20, which illustrates the subfield structure of the data channel.

Schulz (U.S. Patent 5,648,967) discloses a block B3 having 456 bits as shown in figure 4.

Response to Arguments

6.   Applicant's arguments with respect to claims 1 and 3-18 have been considered but are

moot in view of the new ground(s) of rejection.

Contact Information

7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Toan D Nguyen whose telephone number is 703-305-0140. The

examiner can normally be reached on Monday- Friday (7:00AM-4:30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Mr. Huy Vu can be reached on 703-308-6602. The fax phone numbers for the

organization where this application or proceeding is assigned are 703-872-9314 for regular

communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is 703-305-9600.

Toan D. Nguyen